

AMENDMENTS TO THE DRAWINGS

The attached 1 sheet of drawings includes replacement drawing sheet 4. This sheet, which includes Figures 7-10, replaces the original drawing sheet 4 including Figures 7-9.

REMARKS

Claims 17-29 are presented for reconsideration and further examination in view of the foregoing amendments and following remarks.

In the outstanding Office Action, the Examiner objected to the drawings under 37 C.F.R. 1.83(a) as not showing every feature of the invention specified in the claims. The Examiner specifically required that “the corrugated longitudinal profile as called for in claim 19 must be shown or the feature(s) canceled from the claim(s)” and required submission of corrected drawing sheets.

In the outstanding Office Action, the Examiner rejected claims 16, 23 and 29 under 35 U.S.C. § 102(b), as anticipated by U.S. Patent No. 1,835,367 to Becker et al. (hereinafter referred to as “the Becker et al. ‘367 patent”).

In the outstanding Office Action, the Examiner rejected claims 17-19 under 35 U.S.C. § 103(a), as being unpatentable over the Becker et al. ‘367 patent in view of U.S. Patent No. 2,093,208 to Nolte (hereinafter referred to as “the Nolte ‘208 patent”). The Examiner also rejected claims 20-22 and 24-28 under 35 U.S.C. § 103(a), as being unpatentable over the Becker et al. ‘367 patent and rejected claim 30 under 35 U.S.C. § 103(a), as being unpatentable over the Becker et al. ‘367 patent in view of U.S. Patent No. 4,917,543 to Cole et al. (hereinafter referred to as “the Cole et al. ‘543 patent”).

By this Response and Amendment, claims 17-29 have been amended. Claims 16 and 30 have been cancelled without prejudice or disclaimer to the content therein. In this regard, Applicants note that the amended claims merely clarify the subject matter recited in the rejected claims, but do not narrow the scope of the claims.

Amended claim 29 includes the subject matter of original claim 29 and now-cancelled claim 30 and a portion of the subject matter of now-cancelled claim 16. Claims 17 and 19-28 have been amended to change the dependency of the claims from now-cancelled claim 16 to still-pending claim 29. Claims 17-29 have been amended to reflect a slight change in subject matter terminology accordingly.

It is respectfully submitted that the above amendments do not introduce any new matter to this application within the meaning of 35 U.S.C. §132.

Drawing Objection

The Examiner objected to the drawings under 37 C.F.R. 1.83(a) as not showing every feature of the invention specified in the claims. The Examiner specifically required that “the corrugated longitudinal profile as called for in claim 19 must be shown or the feature(s) canceled from the claim(s)” and required submission of corrected drawing sheets.

Response

The attached amendment to the drawings is believed to address the Examiner’s objection. Per the Examiner’s requirement, Figure 10 has been added showing a corrugated longitudinal profile as referred to in paragraph [0012] and claim 19.

Applicants respectfully submit that the above amendment obviates the Examiner’s objection to the drawings.

Claim Rejections under 35 U.S.C. § 102(b)

The Examiner rejected claims 16, 23 and 29 under 35 U.S.C. § 102(b), as anticipated by the Becker et al. ‘367 patent.

Response

By this Response and Amendment, Applicants have cancelled claim 16 without prejudice or disclaimer to the content therein and therefore the rejection thereto is now moot.

Applicants traverse the remaining rejections as all of the features of the presently claimed invention are not disclosed, taught or suggested by the cited prior art of record.

For a reference to anticipate an invention, all of the elements of that invention must be present in the reference. The test for anticipation under section 102 is whether each and every element as set forth in the claim is found, either expressly or inherently, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP §2131. The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); MPEP §2131.

Overview

Applicants' amended claim 29 recites: "A retaining wall, comprising: at least two king piles, each of said king piles comprising a web and two parallel flanges carried by the web, said flanges being fitted with connection means along their longitudinal edges, wherein said flanges are reinforced, on the side opposite the web over the major part of their width, by an extra material thickness, which starts with a slope only at a certain distance from the longitudinal edges of the flange, so that said flange has flange ends of smaller thickness, said connection means being carried by said flange ends of smaller thickness; at least one interlock section connecting said at least two king piles by their connection means at their flanges, wherein said extra material thicknesses of said reinforced flanges are dimensioned to form bearing surfaces in front of said interlock sections; and at least one wale bearing on said bearing surfaces formed by said extra material thicknesses in front of said interlock sections."

The Becker et al. '367 patent is drawn to "coffer-dam constructions and aims to provide an improved wall structure formed by sections of sheet metal piling" (page 1, lines 1-4) "a structure in which I sections are alternated, either singly or in groups of two or more, with sections which are open toward the face of the wall, such for example as channel sections or H sections with the central web running parallel to the wall axis" (page 1, lines 85-91).

Rejection of claims 23 and 29

Applicants respectfully disagree with the Examiner's assertion in the outstanding Office Action (page 3) that "Becker et al. discloses a king pile for retaining walls comprising... said flanges are reinforced (this is considered as the thickness of the flange that extends from the upper notch of the edge to the outermost section of the flange), on the side opposite the web over the major part of their width, by an extra material thickness, said extra material thickness starting only at a certain distance from the longitudinal edges of said flange, so that said flange has flange ends of smaller thickness carrying said connection means." The Examiner seems to be of the opinion that the rather thick flange ends in the I-sections and H-sections of Fig. 1 or 2 of the Becker et al. '367 patent, can be considered as flange ends of smaller thickness carrying connection means, because they are provided with an "upper notch" arranged along the longitudinal outer edge of the flange end and a "lower groove" arranged in the inner surface of the flange end.

However, the object of this upper notch and lower groove is to warrant a complementary fitting of the flange ends with the T-shape connection bars “d” and with the flange ends of an H-section (as shown in Fig. 2 of the Becker et al. ‘367 patent) and surely not to provide flange ends of smaller thickness for carrying connection means. It is an undeniable fact that in the disclosure of the Becker et al. ‘367 patent, the upper notch and lower groove serve *solely* to define complementary connection means in a thick flange end. Logically, one cannot argue that the Becker et al. ‘367 patent teaches or suggests connection means carried by a flange end of smaller thickness.

Furthermore, the Examiner cited “thickness of the flange that extends from the upper notch of the edge to the outermost section of the flange” (page 3 of the outstanding Office Action), clearly does not start with a slope and therefore does not anticipate “an extra material thickness, which starts with a slope only at a certain distance from the longitudinal edges of the flange” as recited in Applicants’ amended claim 29.

Consequently, the Becker et al. ‘367 patent is not only devoid of a disclosure relating to a wale bearing on the flanges of the I-sections, but is also devoid of any disclosure or suggestion of the following claimed patentable features recited in amended claim 29: “an extra material thickness, which starts with a slope only at a certain distance from the longitudinal edges of the flange, so that said flange has flange ends of smaller thickness, said connection means being carried by said flange ends of smaller thickness.”

Therefore, Applicants respectfully submit that the Becker et al. ‘367 patent does not disclose, teach, or suggest the novel and patentable features of a retaining wall comprising “an extra material thickness, which starts with a slope only at a certain distance from the longitudinal edges of the flange, so that said flange has flange ends of smaller thickness, said connection means being carried by said flange ends of smaller thickness” as recited in amended claim 29 of the instant application.

Accordingly, Applicants submit that amended claim 29 is patentable over the prior art of record, and submit that amended claim 23 which depends from amended independent claim 29, is also then patentable over the prior art of record and request indication of such.

Notwithstanding the above, it is respectfully submitted that the claims depending from claim 29 also have features which are novel and inventive *per se*.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections.

Claim Rejections under 35 U.S.C. § 103(a)

The Examiner rejected claims 17-19 under 35 U.S.C. § 103(a), as being unpatentable over the Becker et al. '367 patent in view of the Nolte '208 patent. The Examiner also rejected claims 20-22 and 24-28 under 35 U.S.C. § 103(a), as being unpatentable over the Becker et al. '367 patent and rejected claim 30 under 35 U.S.C. § 103(a), as being unpatentable over the Becker et al. '367 patent in view of the Cole et al. '543 patent.

Response

By this Response and Amendment, Applicants have cancelled claim 30 without prejudice or disclaimer to the content therein and therefore the rejection thereto is now moot.

Applicants respectfully traverse the remaining rejections since all of the features of the presently claimed subject matter are not disclosed by the cited references.

Applicants respectfully submit that the Nolte '208 patent and Cole et al. '543 patent fail to cure the deficiencies of the Becker et al. '367 patent with respect to the claimed subject matter in accordance with Applicants' amended claim 29 and further, does not suggest a teaching or motivation to reach such subject matter as claimed in the instant application. Applicants further respectfully submit that the cited prior art of record does not suggest a teaching or motivation to reach such subject matter as claimed in the instant application.

Amended independent claim 29 of the instant application recites: "A retaining wall, comprising: at least two king piles, each of said king piles comprising a web and two parallel flanges carried by the web, said flanges being fitted with connection means along their longitudinal edges, wherein said flanges are reinforced, on the side opposite the web over the major part of their width, by an extra material thickness, which starts with a slope only at a certain distance from the longitudinal edges of the flange, so that said flange has flange ends of smaller thickness, said connection means being carried by said flange ends of smaller thickness; at least one interlock section connecting said at least two king piles by their connection means at their flanges, wherein said extra material thicknesses of said reinforced flanges are dimensioned

to form bearing surfaces in front of said interlock sections; and at least one wale bearing on said bearing surfaces formed by said extra material thicknesses in front of said interlock sections.”

The Nolte ‘208 patent discloses a method of making sheet metal piling by “providing a sheet piling wall consisting of sections of T-form having relatively wide flanges in which the flanges are formed by a single metal sheet welded or otherwise secured to the web of a T-flange having relatively small flanges” (page 1, lines 14-19 of the Nolte ‘208 patent).

The Cole et al. ‘543 patent discloses a wall system of polymeric material for use as permanent concrete forms. This system comprises arcuately curved panels which are interconnected by connector elements 25 and retained and supported by a plurality of transversely extending wale members 30.

As these transversely extending wale members are received *directly* against the outer convex surfaces of the arcuately curved panels, one must necessarily conclude that the Cole et al. ‘543 patent is obviously devoid of any teaching suggesting bearing surfaces for wale members that are formed by an extra material thickness between the connecting means of a sheet pile.

Therefore, a combination of the teachings of the Becker et al. ‘367 patent and the Cole et al. ‘543 patent or the Becker et al. ‘367 patent and the Nolte ‘208 patent cannot result in a retaining wall as claimed in claim 29, because such a combination does not suggest a flange reinforcement with “an extra material thickness, which starts with a slope only at a certain distance from the longitudinal edges of the flange, so that said flange has flange ends of smaller thickness carrying the connection means, and said extra material thickness is moreover dimensioned so as to form a bearing surface for a wale in front of said interlock sections” as recited in claim 29.

In comparison to the prior art retaining walls, a retaining wall according to Applicants’ amended claim 29 has for example at least the following advantages:

the king piles used for constructing said retaining wall can be easily rolled;

said retaining wall can be easily implemented with different kinds of connection systems, which have been proven on site;

said retaining wall may feature a high strength modulus without having to significantly increase its depth (i.e. the height of the web of a king pile);

and last but not least, due to the bearing surfaces formed in front of the interlock sections by said extra material thicknesses of the flanges, there is an excellent transmission of the forces between the king piles and wales reinforcing the retaining wall.

Rejection of claims 17-19

With respect to the Examiner's assertions that the Becker et al. '367 patent fails to disclose connection means, but that the Nolte '208 patent "teaches the connection means as called for in claims 17-19 (see Fig. 2)...it would have been obvious to one of ordinary skill in the art to modify Becker et al. by substituting the connection means as taught by Nolte for the connection means disclosed by Becker et al. since it is a design choice to substitute equivalent parts to perform equivalent functions," Applicants respectfully disagree. With respect to claim 17, Applicants fail to see in Fig. 2 of the Nolte '208 patent any "connection means comprises [sic] an enlargement of triangular cross section, which is carried by one of said flange ends of smaller thickness" on the side opposite the web, as recited in Applicants' amended claim 17. No further sections of the Nolte '208 patent are cited in support.

Thus, contrary to the Examiner's statement, the Nolte '208 patent fails to teach the connection means inarguably lacking in the Becker et al. '367 patent and therefore neither the Becker et al. '367 nor the Nolte '208 patent provide the connection means of the present claims 17 and 19.

It is therefore respectfully submitted that claim 17 and similarly, claim 19 are novel and patentable over the cited prior art of record and Applicants request indication of such.

Accordingly, Applicants submit that claim 18 which depends from claim 17, is also then patentable over the prior art of record and requests indication of such.

Rejection of claims 20-22 and 24-28

As discussed above, there is *no* disclosure in the Becker et al. '367 patent for a retaining wall comprising "an extra material thickness, which starts with a slope only at a certain distance from the longitudinal edges of the flange, so that said flange has flange ends of smaller thickness, said connection means being carried by said flange ends of smaller thickness" as recited in amended claim 29 of the instant application.

Therefore, Applicants respectfully submit that the Becker et al. '367 patent does not disclose, teach, or suggest the novel and unobvious features of a retaining wall comprising "an extra material thickness, which starts with a slope only at a certain distance from the longitudinal edges of the flange, so that said flange has flange ends of smaller thickness, said connection means being carried by said flange ends of smaller thickness" as recited in amended claim 29 of the instant application.

Accordingly, Applicants submit that claim 29 is novel and unobvious over the prior art of record, and submits that amended claims 20-22 and 24-28 which depend from amended independent claim 29, are also then patentable over the prior art of record and requests indication of such.

Notwithstanding the above, it is respectfully submitted that the claims depending from claim 29 also have features which are novel, unobvious and patentable *per se*.

For example regarding the features of claim 20, the Examiner has already admitted that the Becker et al. '367 patent does not disclose connection means and therefore the Becker et al. '367 patent cannot disclose flange ends of smaller thickness carrying connection means and does not disclose welding an interlock section of a sheet pile to a king pile flange. Consequently, the Becker et al. '367 patent is incapable of suggesting "connection means comprises [*sic*] an interlock section for a sheet pile, which is welded end to end on a lateral face of one of said flange ends of smaller thickness" as recited in claim 20. It will be appreciated by one of ordinary skill in the art that the flange ends of smaller thickness make the end-to-end welding operation much easier.

Regarding the features of claim 21, the Becker et al. '367 patent does not disclose flange ends of smaller thickness carrying connection means and does not disclose an interlock section for a sheet pile that is carried by a U-shaped section. Consequently, the Becker et al. '367 patent is incapable of making the suggestion of "connection means comprises [*sic*]... carried by a U-shaped section threaded onto one of said flange ends of smaller thickness, said U-shaped section being fixed to said flange end by two corner welds" as recited in claim 21. It will be appreciated by one of ordinary skill in the art that the flange ends of smaller thickness allow one to make the U-shaped section much lighter.

Finally, regarding the features of claim 22, the flanges of the I-sections and H-sections of Fig. 1 or 2 in the Becker et al. '367 patent have a flat outer flange without any groove therein.

Consequently, the Becker et al. '367 patent could not have suggested a “retaining wall ... wherein said extra material thickness on a flange is divided in two by a longitudinal groove running above the web” as recited in claim 22. It will be appreciated by one of ordinary skill in the art that such a longitudinal groove running above the web facilitates the rolling of the king pile.

As discussed above, there is *no* disclosure in the Becker et al. '367 patent for a retaining wall comprising “an extra material thickness, which starts with a slope only at a certain distance from the longitudinal edges of the flange, so that said flange has flange ends of smaller thickness, said connection means being carried by said flange ends of smaller thickness” as recited in amended claim 29 of the instant application.

Therefore, Applicants respectfully submit that the Becker et al. '367 patent does not disclose, teach, or suggest the novel and unobvious features of a retaining wall comprising “an extra material thickness, which starts with a slope only at a certain distance from the longitudinal edges of the flange, so that said flange has flange ends of smaller thickness, said connection means being carried by said flange ends of smaller thickness” as recited in amended claim 29 of the instant application.

As Applicants have demonstrated above that amended claims 17 and 29 are novel, unobvious and consequently patentable, claims 18; and 17-19, 20-22 and 24-28 are also novel, unobvious and consequently patentable over the cited prior art by virtue of their direct or indirect dependency from claims 17 and 29, respectively. No *prima facie* rejection under 35 U.S.C. 103(a) can be made against these claims and Applicants request an indication of such.

In view of the foregoing, reconsideration and withdrawal of the above rejections is respectfully requested.

CONCLUSION

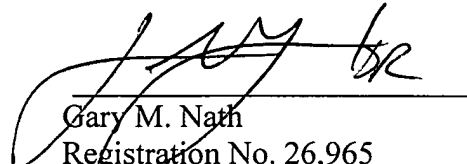
In light of the foregoing, Applicants submit that the application is now in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicants respectfully request that the Examiner call the undersigned attorney(s).

Respectfully submitted,

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